



ABSTRACT

The present invention concerns a process and an apparatus for thermal conversion of
5 biomass and organic wastes. According to the invention, the feedstock is fed into a
fluidized-bed reactor, wherein the feed is converted at an elevated temperature under the
influence of particulate matter kept in a fluidized state by a fluidizing gas, the particulate
matter is transferred from the reactor to a regenerator for regeneration and then
recirculated to the reactor after the regeneration, and the converted hydrocarbon products
10 are recovered from the reactor. Both the reactor and the regenerator comprise risers
having an axially annular cross section and being equipped with multi-inlet cyclones for
the separation of particulate matter. By means of the invention, it is possible to produce
pyrolysis oil, the quality of which is higher than that of oil produced with the processes
of the prior art. The incorporation of multi-inlet cyclones into the reactor configuration
15 reduces gas velocities, reduces the physical size of the cyclone and shortens the residence
time of gases in the cyclone.

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